

Claims

- [c1] 1.A system for delivery of dry bulk material, the system comprising:
a downspout, having a top side, a bottom side, a right side and a left side, the downspout for carrying a dry bulk material;
a plurality of flow-retarding members disposed in said downspout, and spanning a space near said bottom side and between said right side and said left side;
means for retaining said flow-retarding members at a predetermined location; and,
where a minimum distance between a bottom edge of each of said plurality of flow-retarding means and said bottom side is greater than a predetermined dimension representative of a largest dimension of a typical piece of the dry bulk material.
- [c2] 2.A system of claim 1 wherein:
said plurality of flow-retarding members are inserts configured so as to be inserted through at least one of the right side and the left side.
- [c3] 3.A system of claim 2 wherein said inserts are solid cylindrical metal bars.

- [c4] 4.A system of claim 3 wherein said means for retaining flow-retarding members comprise structures coupled to the solid cylindrical metal bars outside of said down-spout.
- [c5] 5.A system of claim 4 wherein said structures are threaded caps.
- [c6] 6.A system of claim 1 wherein said plurality of flow-retarding members are not all disposed in a single linear arrangement.
- [c7] 7.A system of claim 6 wherein said plurality of flow-retarding members are disposed in a plurality of separate parallel linear arrangements.
- [c8] 8.A system of claim 7 wherein none of said plurality of flow-retarding members is disposed directly above another of said plurality of flow-retarding members when said downspout is oriented horizontally.
- [c9] 9.A system of claim 1 wherein said plurality of flow-retarding members are replacements of earlier installed bars, wherein a difference in diameter between said plurality of flow-retarding members and said earlier installed bars exists.
- [c10] 10.A system of claim 1 wherein said means for retaining

are threaded caps.

- [c11] 11.A method of maintaining an elevated downspout which is configured for carrying gravity fed dry bulk material, the method comprising the steps of:
disconnecting a flow-retarding bar retainer from a first flow-retarding bar which extends through a hole in a first side of said downspout to an opposing side;
removing said first flow-retarding bar from said downspout;
inserting in said hole a replacement flow-retarding bar which spans from said first side to said second side; and,
connecting a flow-retarding bar retainer to said replacement flow-retarding bar.
- [c12] 12.A method of claim 11 wherein said step of disconnecting comprises unscrewing a first threaded cap from a first end of said first flow-retarding bar.
- [c13] 13.A method of claim 12 further comprising the steps of removing a second threaded cap from a second end of said first flow-retarding bar.
- [c14] 14.A system for delivering dry bulk material from an elevated location comprising:
a source of dry bulk material;
a downspout extending downward from said source of

dry bulk material;
said downspout comprising:
a top side,
a first side, coupled to said top side;
a second side coupled to said top side;
a bottom side coupled to said first side and said second side;
means for causing dry bulk material flowing through said downspout to exhibit a slower velocity near said bottom side than at said top side.

- [c15] 15.A system of claim 14 further comprising:
means for retaining, within said downspout, said means for causing.
- [c16] 16.A system of claim 15 wherein said means for retaining further permits replacement of said means for causing without requiring said downspout to be disconnected from said source of dry bulk material and without dismantling a portion of said downspout.
- [c17] 17.A system of claim 15 wherein said means for causing comprises a plurality of elongated bars.
- [c18] 18.A system of claim 17 wherein each of said plurality of elongated bars is cylindrical.
- [c19] 19.A system of claim 18 wherein said downspout has a

rectangular cross section.

[c20] 20.A system of claim 19 wherein said plurality of elongated bars are disposed nearer to said bottom side than said top side and span between said first side and said second side.

[c21] 21.A method for sorting dry bulk material comprising the steps of:
providing a first location for collection of dry bulk material;
providing a second location for collection of dry bulk material;
providing a downspout having a plurality of flow-retarding members disposed therein in a serial arrangement running along a major axis of said downspout where a first flow-retarding member in a series is disposed near an upper section of said downspout and a last flow-retarding member in said series is disposed at a lower section of said downspout;
causing dry bulk material to create a first flow through said downspout;
allowing the dry bulk material to flow into the first location until a first one of the following events occurs:
a time period elapses; and,
an amount of dry bulk material is allowed to flow into said first location;

diverting said dry bulk material to said second location;
and,
terminating flow of dry bulk material through said downspout and allowing the downspout to completely drain of dry bulk material into said second location.

[c22] 22.A method of claim 21 further comprising the steps of:
causing dry bulk material to again flow through the downspout and redirecting dry bulk material into said first location;
allowing the dry bulk material to flow into the first location until a first one of the following events occurs:
a predetermined time period elapses; and,
a predetermined amount of dry bulk material is allowed to flow into said first location;
diverting said dry bulk material to said second location;
and,
terminating flow of dry bulk material through said downspout and allowing the downspout to completely drain of dry bulk material into said second location.

[c23] 23.A method of claim 22 wherein said predetermined amount of dry bulk material is a fixed volume.

[c24] 24.A method of claim 22 wherein said predetermined amount of dry bulk material is based upon a remainder amount of dry bulk material yet to be allowed to flow

through the downspout which is remaining in a third location.

[c25] 25.A method of claim 24 wherein said third location is an elevated location above said first and said second locations.

[c26] 26.A method of claim 21 wherein said plurality of flow-retarding members comprises a plurality of elongated bars extending across said downspout.

[c27] 27.A method of claim 26 wherein said plurality of bars are inserted through a hole in a side of said downspout and span across said downspout to an opposing side.

[c28] 28.A method of claim 27 wherein each of said plurality of bars is readily replaceable by removing a bar retainer and pulling the bar through the hole and inserting a replacement bar through said hole.

[c29] 29.A method of claim 28 wherein said dry bulk material is grain.

[c30] 30.A method of claim 29 wherein said grain is transported from said first location and said second location and sold to one purchaser as grain having different characteristics and receiving differing prices per unit weight for grain from said first location and said second

location.